
चिमटी, कर्ण और नाक,
मगरमच्छ क्रिया — विशिष्टि
(पहला पुनरीक्षण)

Forceps, Aural and Nasal,
Crocodile Action — Specification
(First Revision)

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FOREWORD

This Indian Standard (First Revision) was adopted by the Bureau of Indian Standards after the draft finalized by the Ear, Nose and Throat Surgery Instruments Sectional Committee and approval of the Medical Equipment and Hospital Planning Division Council.

This standard was originally published in 1966. First revision of this standard has been taken up to update it with development taken place in the field. All the amendments issued so far have been incorporated in this revision.

This Indian Standard is one of a series on surgical instruments. This standard has been prepared based on indigenous manufacturers' data/practices prevalent in the field in India.

Though aural forceps, crocodile action, Hartmann's pattern, has its jaws in many types, only two sizes of jaws with serrated tips have been covered for the present in this standard. Nasal polypi forceps covered is of Watson William's pattern.

For the purpose of deciding whether a particular requirement of this standard is complied with the final value, observed or calculated, expressing the result of a test or analysis shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

FORCEPS, AURAL AND NASAL, CROCODILE ACTION — SPECIFICATION

(*First Revision*)

1 SCOPE

This standard specifies the requirements of aural forceps, crocodile action, with serrated jaws and nasal polypi forceps with crocodile action.

2 REFERENCES

The Indian Standards given below contain provisions which, through reference in this text, constitute provisions of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of these standards.

<i>IS No.</i>	<i>Title</i>
1501 (Part 1) : 2013	Metallic materials — Vickers hardness test: Part 1 Test method (<i>fourth revision</i>)
1570 (Part 5) : 1985	Schedules for wrought steels: Part 5 Stainless and heat-resisting steels (<i>second revision</i>)
3642 (Part 1) : 1990	Surgical instruments — Specification: Part 1 Non-cutting, articulated instruments (<i>second revision</i>)
7531 : 1990	Surgical instruments — Corrosion resistance of stainless steel surgical instruments — Methods of tests (<i>first revision</i>)

3 MATERIALS

3.1 The forceps shall be made of stainless steel conforming to designation 30Cr13 of IS 1570 (Part 5).

3.2 The rivets shall be of same grade of stainless steel as used for the forceps at **3.1**.

4 SHAPE AND DIMENSIONS

4.1 The shape and dimensions of the forceps shall be as given in Fig. 1, 1A and 2.

4.2 Tolerances on dimensions where not specified shall conform to IS 3642 (Part 1).

4.3 Serrations

Serration on the forceps as specified in IS 3642 (Part 1) shall apply subject to the pitch and depth of the serrations as specified in the figures.

4.4 Joints

The joints of the forceps shall be as shown in Fig. 1, 1A and 2.

4.5 Finger Loops

Finger loops shall be as given in IS 3642 (Part 1).

5 HEAT TREATMENT

The forceps, except the rivet, shall be evenly hardened and tempered to a hardness of 430 to 490 HV of the finished instrument when tested in accordance with IS 1501 (Part 1).

6 WORKMANSHIP AND FINISH

6.1 The forceps shall be free from scale, burrs, pits, tool marks and like defects. All edges shall be smooth and even. The instruments shall be passivated and polished bright all over.

6.2 The forceps shall operate smoothly and the upper jaw shall fit snugly into the corresponding grooves in the lower jaw. The maximum opening of the upper jaw shall correspond to the maximum opening of the finger loops, that is, when the finger loops are open to their maximum position, the jaw shall not move further.

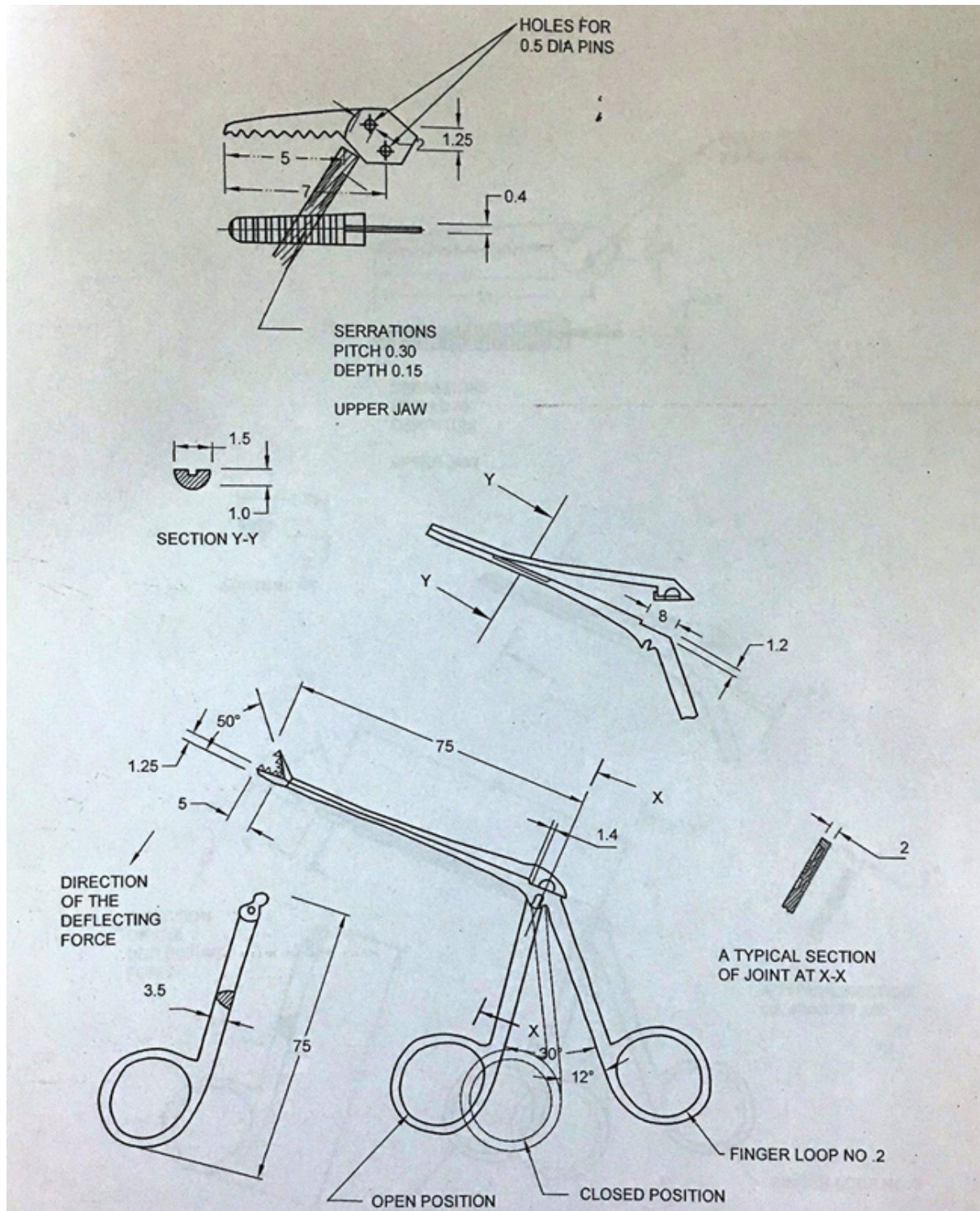
6.3 The serrations shall be clear and clean.

7 TESTS

7.1 The forceps shall be tested by picking up at the tip fine hairs or bits of threads and fibres strewn on a polished surface, for example, a glass plate.

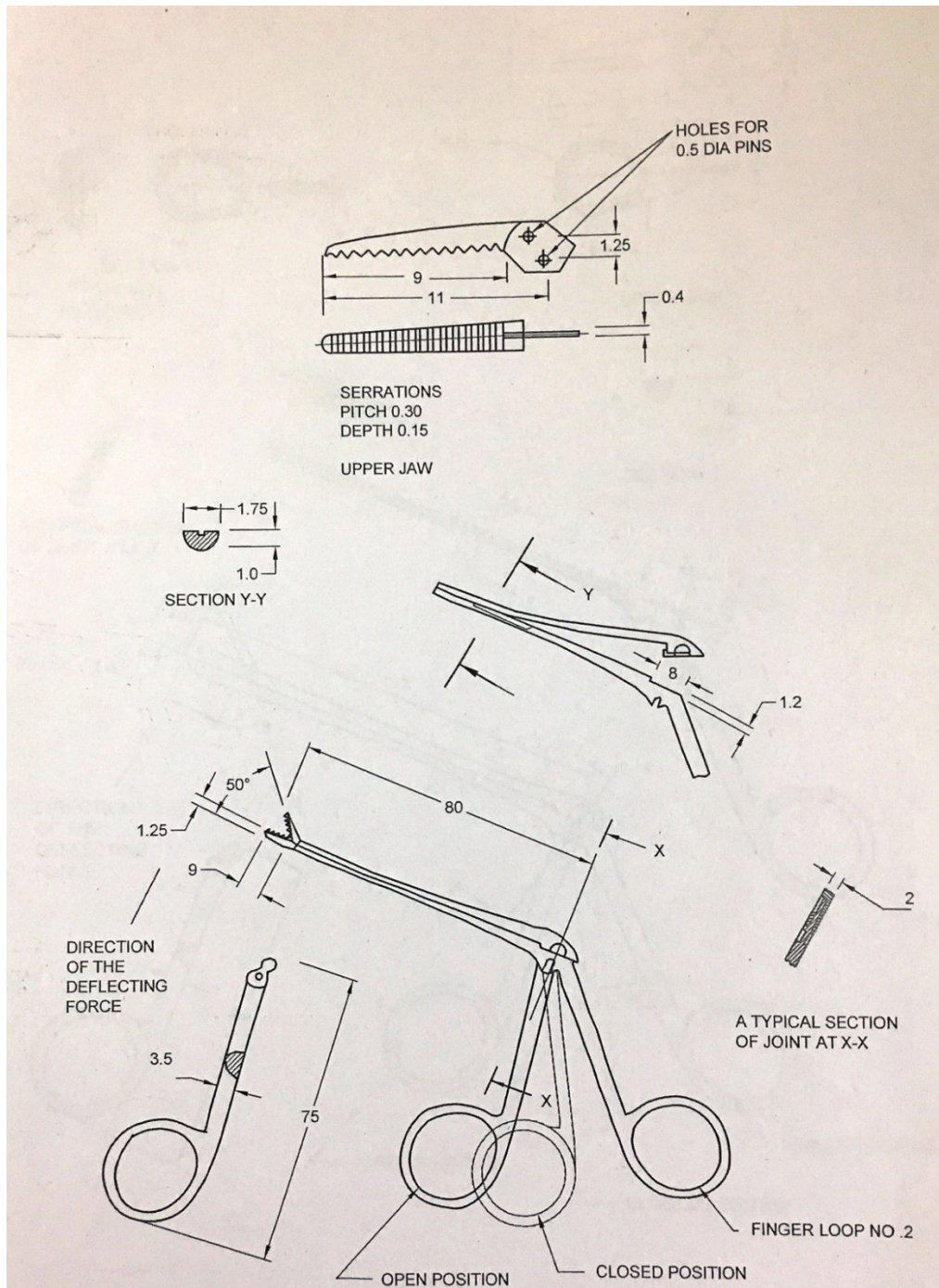
7.2 Forceps shall pass the tests for:

- (a) Engagement of tips,
- (b) Engagement of jaws, and
- (c) Uniformity of serrations prescribed in IS 3642 (Part 1).



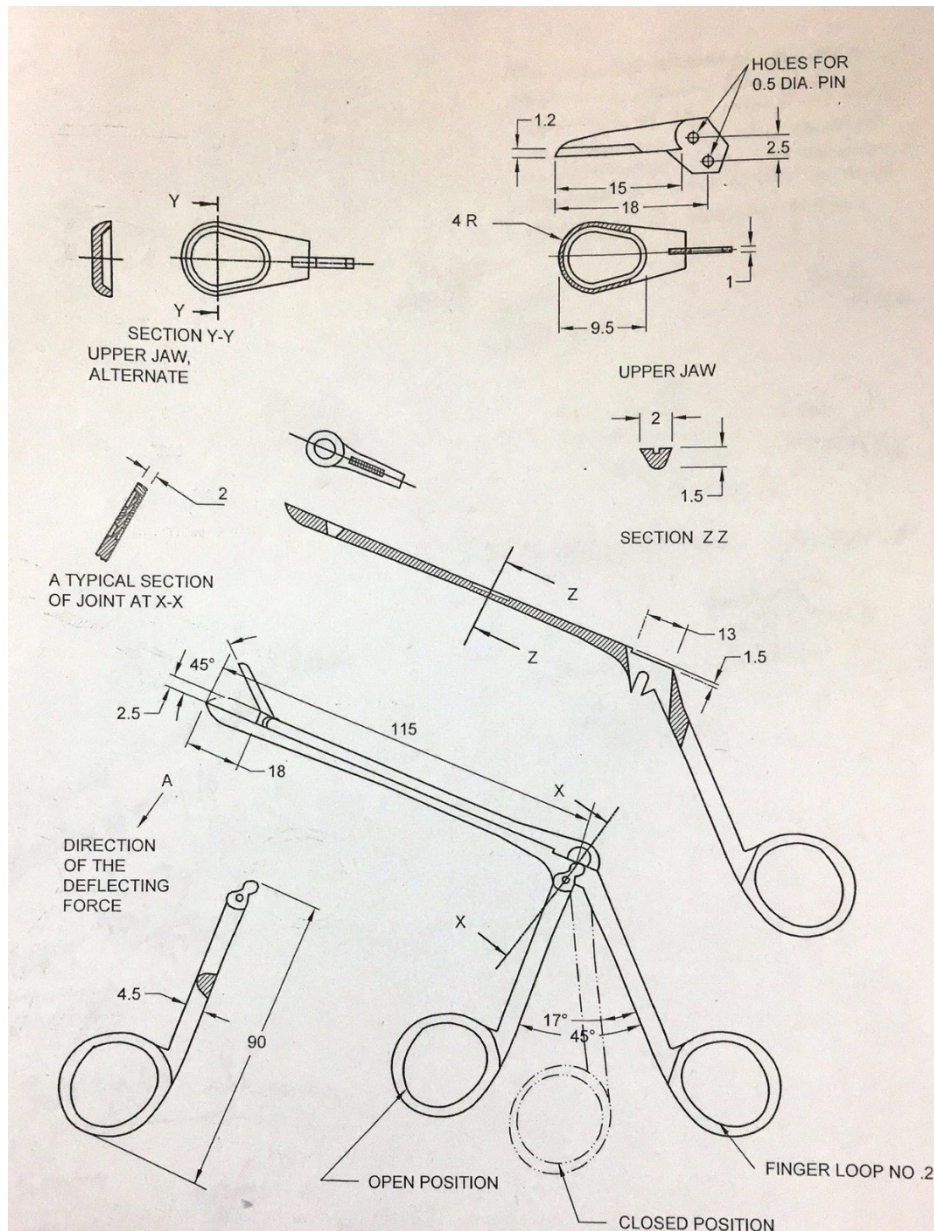
All Dimensions in Millimetres

FIG. 1 AURAL FORCEPS, CROCODILE ACTION, HARTMANN'S PATTERN, 5 MM JAW



All dimensions in millimetres

FIG. 1A AURAL FORCEPS, CROCODILE ACTION, HARTMANN'S PATTERN, 9 MM JAW



All Dimensions in Millimetres

FIG. 2 NASAL POLYPI FORCEPS, WATSON WILLIAM'S PATTERN

7.3 Flexibility Test

The flexibility shall be tested in the following manner.

7.3.1 The jaws shall be made to bite a piece of firm rubber about 1.5 mm thick and the finger loops approximated as fully as possible. On release, the forceps shall not show any sign of damage or the upper jaw shall not become loose at its hinge.

7.3.2 The forceps shall be fixed in a vice at a point near the joint, in such a manner that the whole length of the blades with the jaws fully closed protrudes outside the vice in a horizontal plane. By the application of a force to the tip of jaws, the blades shall be deflected by 10 mm in the horizontal plane. The bending shall be carried out in the direction of the arrow *A* shown in Fig. 1. The test shall be repeated by deflecting the blades downwards by the same distance that is 10 mm. On completion of the test, the forceps shall not show a permanent set.

7.4 Corrosion Resistance

The instrument shall satisfy the boiling and autoclaving test as specified in IS 7531.

8 MARKING

8.1 The forceps shall be clearly and indelibly marked with the manufacturer's name, initials or trade-mark.

8.2 BIS Certification Marking

The forceps may also be marked with Standard Mark.

8.2.1 The use of the Standard Mark is governed by the provisions of *Bureau of Indian Standards Act, 2016* and the Rules and Regulations made thereunder. The details of the conditions under which the licence for use of the Standard Mark may be granted to manufacturers or producers may be obtained from the Bureau of Indian Standards.

9 PACKING

The forceps shall be wrapped individually in moisture proof paper or polyethylene bag and packed in a manner that coming into contact with one another is avoided.

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Amendments Issued Since Publication

Amend No.	Date of Issue	Text Affected

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